CLAIMS:

1. A method of dynamic frequency allocation for use in a wireless communications network geographically arranged into regions, each region containing at least one fixed base station and one or more subscriber terminals, communications between the fixed base station and the one or more subscriber terminals in each region taking place over an allocated one of a plurality of communications channels available for use by the network, the method comprising the steps of:-

(a) monitoring the radio conditions on at least the allocated channel in each region;

(b) generating one or more channel metrics corresponding to the monitored radio conditions on the channel; and

(c) reallocating a different channel to at least those regions where the generated channel metrics indicate that the allocated channel in those regions is suffering interference;

wherein steps (a), (b) and (c) are continuously repeated in order whereby channels may be dynamically reallocated to regions during continuous network operation.

2. A method according to claim 1, wherein one of said channel metrics is received signal strength (RSSI) corresponding to the total power on the channel.

3. A method according to claim 1, wherein one of said channel metrics is a signal-to-noise ratio of transmissions between the fixed base station and the subscriber terminals.

4. A method according to claim 1, wherein one of said channel metrics is unrecoverable channel distortion.

5. A method according to claim 1, wherein said monitoring step (a) and metric generation step (b) are performed by each subscriber terminal in a region such that a separate set of channel metrics are generated by each subscriber terminal.,

6. A method according to claim 1, wherein said monitoring step (a) and said metric generation step (b) are performed by each fixed base station such that a separate set of channel metrics are generated by each fixed base station.

7. A method according to claim 1, and further comprising the step of transmitting the generated channel metrics to a network control server over a signalling channel.

8. A method according to claim 7 wherein said reallocation step (c) is performed centrally by the network control server, channel reallocation information being transmitted from the network control server to at least the fixed base station in each region over the signalling channel.

9. A method according to claim 7, wherein said signalling channel is a permanent ATM VPI/VCI pair.

10. A method according to claim 1, wherein the reallocation step is performed by at least one of the fixed base stations in each region, whereby said step is performed across the network in a distributed manner.

11. A method according to claim 1, wherein the monitoring step (a) further includes the step of monitoring a plurality of the available channels in addition to the allocated channel in each region and the generating step (b) includes the step of generating one or more respective channel metrics

corresponding to the respective radio conditions on each of the plurality of monitored channels.

12. A method according to claim 11, wherein one of the channel metrics generated are the correlation levels obtained by correlating a known training sequence corresponding to the allocated channel with each respective training sequence corresponding to each of the plurality of monitored channels.

13. A method according to claim 11, wherein the reallocating step (c) reallocates one of the plurality of the available channels when the channel metrics for that channel indicate that the channel is not suffering interference.

14. A method according to claim 1, wherein the reallocating step (c) reallocates the available channels to the regions in such a manner that a particular region is allocated a different one of the available channels to those available channels allocated to each of the surrounding adjacent regions to said particular region.

15. A system arranged to perform dynamic channel allocation for use in a wireless communications network geographically arranged into regions, each region containing at least one fixed base station and one or more subscriber terminals, communications between the fixed base stations and the one or more subscriber terminals in each region taking place over an allocated one of a plurality of wireless communications channels available for use by the network, the system comprising:-

(a) monitoring means for monitoring the radio conditions on at least the allocated channel in each region;

(b) metric generation means for generating one or more channel metrics corresponding to the monitored radio conditions on the

channel; and

(c) channel reallocation means for reallocating a different channel to at least those regions when the generated channel metrics indicate that the allocated channel in those regions is suffering interference;

wherein said monitoring means, said metric generation means and said channel reallocation means each repeat their operations in order whereby channels may be dynamically reallocated to regions during continuous network operation.

16. A system according to claim 15, wherein one of said channel metrics is received signal strength (RSSI) corresponding to the total power on the channel.

17. A system according to claim 15, wherein one of said channel metrics is a signal-to-noise ratio of transmissions between the fixed base station and the subscriber terminals.

18. A system according to claim 15, wherein one of said channel metrics is unrecoverable channel distortion.

19. A system according to any of claim 15, wherein said monitoring means (a) and metric generation means (b) are located at each subscriber terminal in a region such that a separate set of channel metrics are generated by each subscriber terminal.

20. A system according to any of claim 15, wherein said monitoring means (a) and said metric generation means (b) are located at each fixed base station such that a separate set of channel metrics are generated by each fixed base station.

21. A system according to any of claim 15 and further comprising transmission means for transmitting the generated channel metrics to a network control server over a signalling channel.

22. A system according to claim 21 wherein said reallocation means (c) are located at the network control server, channel reallocation information generated by the channel reallocation means being transmitted from the network control server to at least the fixed base station in each region over the signalling channel.

23. A system according to claim 21, wherein said signalling channel is a permanent ATM VPI/VCI pair.

24. A system according to any of claim 15, wherein the reallocation means are located at at least one of the fixed base stations in each region, whereby channel reallocation is performed across the network in a distributed manner.

25. A system according to any of claim 15, wherein the monitoring means (a) are further arranged to monitor a plurality of the available channels in addition to the allocated channel in each region and the metric generation means are further arranged to generate one or more respective channel metrics corresponding to the respective radio conditions on each of the plurality of monitored channels.

26. A system according to claim 25, wherein one of the channel metrics generated are the correlation levels obtained by correlating a known training sequence corresponding to the allocated channel with each respective training sequence corresponding to each of the plurality of monitored channels.

27. A system according to claim 25, wherein the channel reallocating means (c) reallocates one of the plurality of monitored channels when the channel metrics for that channel indicate that the channel is not suffering interference.

28. A system according to any of claim 15, wherein the channel reallocating step (c) reallocates the available channels to the regions in such a manner that a particular region is allocated a different one of the available channels to those available channels allocated to each of the surrounding adjacent regions to said particular region.

29. A method of signalling network control messages for use in a packet-switched wireless data network geographically arranged into one or more cells, each cell comprising one or more fixed base stations and a plurality of subscriber terminals arranged in a point-multipoint manner, communications between the base station and subscriber terminals in each cell being performed on a time division multiple access (TDMA) basis, the method being characterised by comprising the steps of:

defining a signalling frame for time division duplex transmission of all data packets between the base station and subscriber terminals; and

transmitting the network control messages as data packets within the defined signalling frame.

30. A method according to claim 29, wherein said data packets are Asynchronous Transfer Mode (ATM) cells.

31. A method according to claim 29, wherein the network control messages are packetised directly into ATM cells.

32. A method according to claim 31, wherein the ATM cells containing

the network control messages are assigned the same VPI/VCI addresses throughout the network, such that the network control messages are sent across a dedicated VPI/VCI pair.

33. A method according to claim 32, wherein the dedicated VPI/VCI pair is permanently available.

34. A method according to claim 30, wherein the network control messages are packetised into Internet Protocol (IP) datagrams, the IP datagrams being subsequently packetised into ATM cells for transmission across the network.

35. A method according to any of claim 29, wherein the network is further provided with a network control server, network control messages being passed between any of the network control server, fixed base stations and subscriber terminals.

36. A method according to claim 35, wherein the network control messages relate to the transmission frequency at which base stations and subscriber terminals should transmit in each cell.

37. A system for signalling network control messages for use in a packet-switched wireless data network geographically arranged into one or more cells, each cell comprising one or more fixed base stations and a plurality of subscriber terminals arranged in a point-multipoint manner, communications between the base station and subscriber terminals in each cell being performed on a time division multiple access (TDMA) basis, the system being characterised by comprising:

means for defining a signalling frame for time division duplex transmission of all data packets between the base station and subscriber terminals;

and

means for transmitting the network control messages as data packets within the defined signalling frame.

38. A system according to claim 37, wherein said data packets are Asynchronous Transfer Mode (ATM) cells.

39. A system according to claim 37, wherein the network control messages are packetised directly into ATM cells.

40. A system according to claim 39, wherein the ATM cells containing the network control messages are assigned the same VPI/VCI addresses throughout the network, such that the network control messages are sent across a dedicated VPI/VCI pair.

41. A system according to claim 40, wherein the dedicated VPI/VCI pair is permanently available.

42. A system according to claim 38, wherein the network control messages are packetised into Internet Protocol (IP) datagrams, the IP datagrams being subsequently packetised into ATM cells for transmission across the network.

43. A system according to any of claim 37, wherein the network is further provided with a network control server, network control messages being passed between any of the network control server, fixed base stations and subscriber terminals.

44. A system according to claim 43, wherein the network control messages relate to the transmission frequency at which base stations and

subscriber terminals should transmit in each cell.